

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims

Claims 1-21 (cancelled)

22. (currently amended) A transparent, non-elastomeric, polythiourethane/urea material comprising the reaction product of:

- (a) at least one (α , ω)-diiso(thio)cyanate polysulfide prepolymer ~~having a number average molecular weight ranging from 100 to 3000 gmol⁻¹~~, said prepolymer being free from disulfide (-S-S-) linkage[$[\cdot]$]; and
- (b) at least one aromatic primary diamine, in an equivalent molar ratio amine function/iso(thio)cyanate function (NH_2/NCX , $\text{X}=\text{O}$, S) ranging from 0.5 to 2, said aromatic primary diamine being free from disulfide (-S-S-) linkage,

wherein the (α , ω)-diiso(thio)cyanate polysulfide prepolymer is the reaction product of at least one cycloaliphatic or aromatic diiso(thio)cyanate and at least one (α , ω)-diol or dithiol prepolymer, said (α , ω)-diol or dithiol prepolymer being a polysulfide or a mixture of polysulfides.

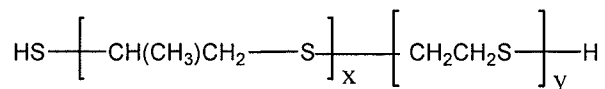
23. (previously presented) The transparent, non elastomeric polythiourethane/urea material of claim 22, wherein the equivalent ratio NH_2/NCX ranges from 0.90 to 1.10.

24. (previously presented) The material of claim 22, wherein the equivalent ratio NH_2/NCX ranges from 0.93 to 0.95.

Claims 25-27 (cancelled)

28. (currently amended) The material of claim 22, wherein the polysulfide or mixture of polysulfides is selected from the group consisting of:

- Prepolymers of formula :

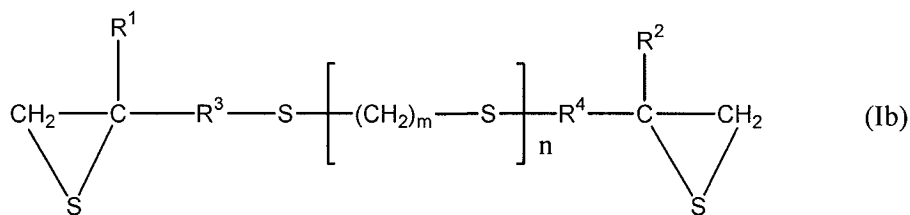


in which x and y are chosen such that the two following conditions are simultaneously satisfied:

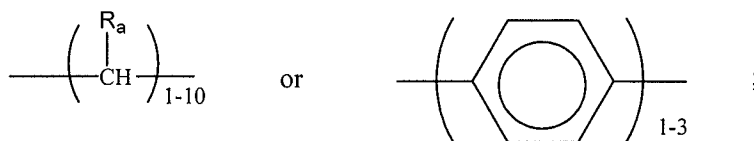
-the number average molecular weight of the prepolymer ranges from 100 to 3000 gmol⁻¹; and

-the prepolymer is a polysulfide;

-Prepolymers resulting from the polymerization of diepisulfides of formula:



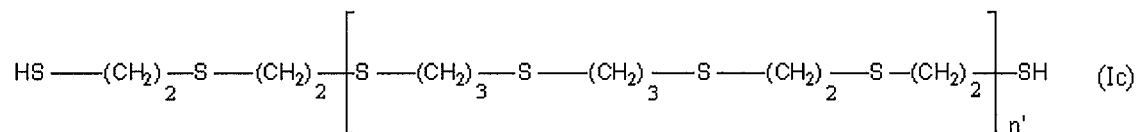
in which R¹ and R² are, independently from each other, H, alkyl, aryl, alkoxy, alkylthio or arylthio; R³ and R⁴ are, independently from each other,



R_a designates H, alkyl, aryl, alkoxy, aryloxy, alkylthio or arylthio and, n is an integer from 0 to 4 and m is an integer from 1 to 6,

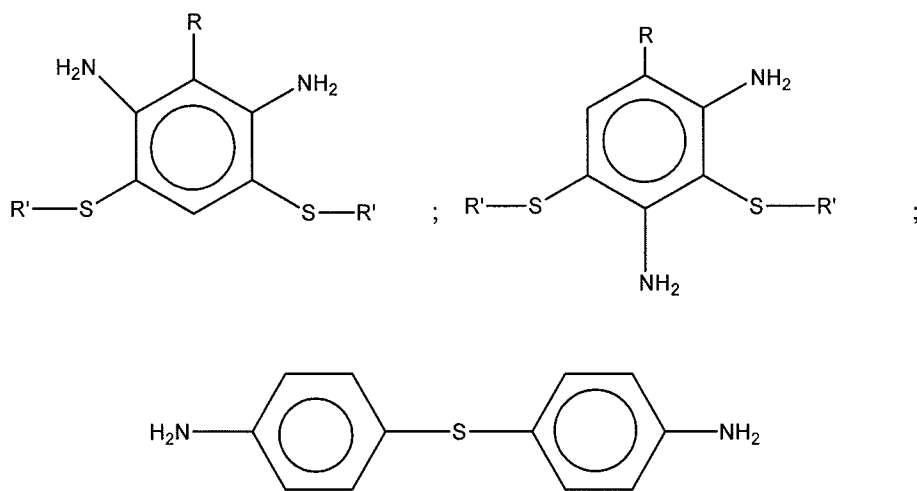
and

-Prepolymers of formula:



where n' is such that the number average molecular weight (\overline{M}_n) of the prepolymer ranges from 500 to 1500 g mol⁻¹.

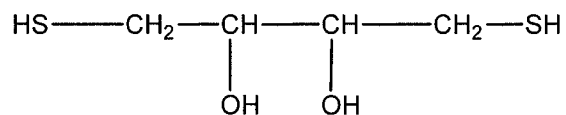
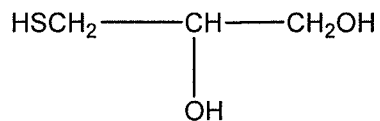
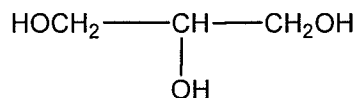
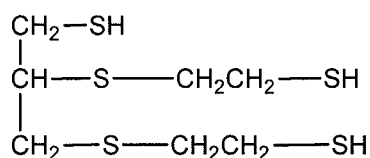
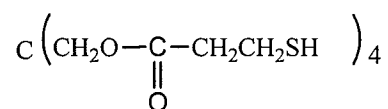
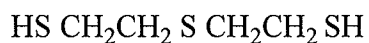
29. (previously presented) The material of claim 22, wherein the aromatic diamine contains at least one S atom in its molecule.
30. (previously presented) The material of claim 29 wherein the diamine is selected from

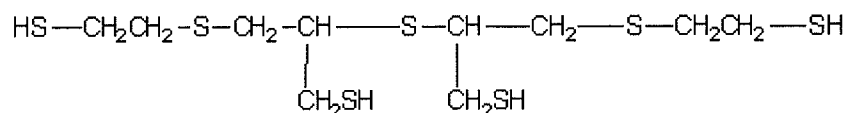
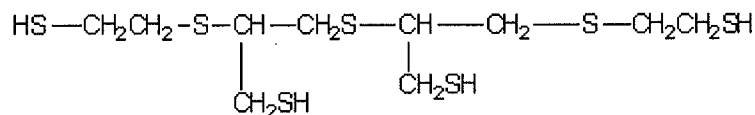
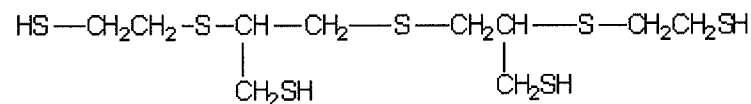


in which R is H or an alkyl group and R' is an alkyl group, and mixtures of the above diamines.

31. (previously presented) The material of claim 22, wherein the material is the reaction product of:
- a) said at least one (α , ω)-diiso(thio)cyanate polysulfide prepolymer;

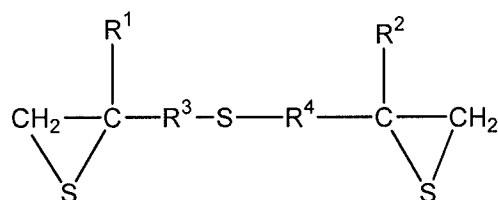
- b) said at least one aromatic primary diamine; and
- c) at least one di-, tri-, or tetra alcohol, or at least one di-, tri-, or tetra thiol, or a mixture thereof.
32. (previously presented) The material of claim 31, wherein the alcohols and thiols are selected from the groups consisting of:



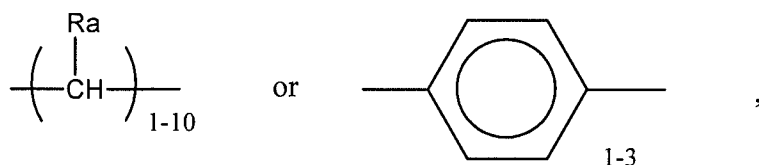


and mixtures thereof.

33. (previously presented) The material of claim 22 having a refractive index, n_D^{25} , higher than 1.53.
34. (previously presented) The material of claim 22 having a refractive index, n_D^{25} , of at least 1.55.
35. (previously presented) The material of claim 22 having a refractive index, n_D^{25} , of at least 1.57.
36. (previously presented) The material of claim 22, wherein the polysulfide is an hyperbranched polysulfide resulting from the polymerization of a diepisulfide of formula:

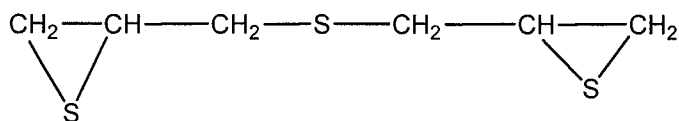


in which R^1 and R^2 are, independently from each other, H, alkyl, aryl, alkoxy, alkylthio or arylthio, R^3 and R^4 are independently from each other,



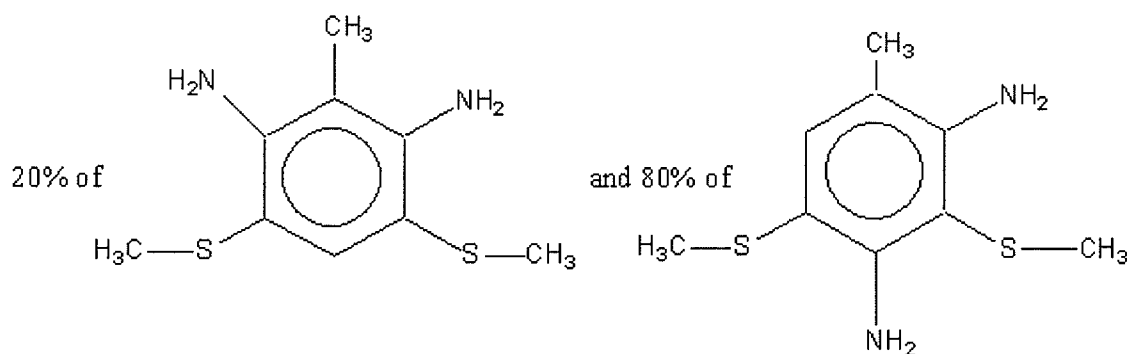
Ra designates H, alkyl, aryl, alkoxy, aryloxy, alkylthio or arylthio, with 2-mercaptoethyl sulfide (DMES).

37. (previously presented) The material of claim 36, wherein the diepisulfide has formula :



38. (previously presented) An optical article made from a material according to claim 22.
39. (previously presented) The material of claim 28, wherein n' is such that the number average molecular weight (\overline{M}_n) of the prepolymer ranges from 650 to 1350 g mol⁻¹.
40. (previously presented) The material of claim 22, wherein the prepolymer is the reaction product of at least one (α, ω) dithiol prepolymer.
41. (cancelled)
42. (previously presented) The material of claim 30, wherein R and R' are CH₃.

43. (previously presented) The material of claim 30, wherein the diamine is a mixture of by weight:



44. (cancelled).
45. (new) The material of claim 22, wherein the at least one (α , ω)-diiso(thio)cyanate polysulfide prepolymer has a number average molecular weight ranging from 100 to 3000 gmol^{-1} .
46. (new) The material of claim 22, wherein the at least one (α , ω)-diiso(thio)cyanate polysulfide prepolymer has a number average molecular weight ranging from 148 to 3000 gmol^{-1} .